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DIALOG(R)File 350:Derwent WPIX
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WPI Acc No: 1985-071723/198512

Prepn. of high mol.wt polyester with lower acetaldehyde concn. - by solid phase polymerisation of crystallised polyester prepolymer based on ethylene terephthalate

Patent Assignee: TOYOCO KK (TOYM)

Number of Countries: 001 Number of Patents: 002

Patent Family:

| Patent No | Kind | Date | Applicat No | Kind | Date | Week |
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| JP 60026026 | A | 19850208 | JP 83134869 | A | 19830722 | 198512 B |
| JP 94017466 | B2 | 19940309 | JP 83134869 | A | 19830722 | 199413 |

Priority Applications (No Type Date): JP 83134869 A 19830722

Patent Details:

| Patent No | Kind | Lan | Pg | Main IPC | Filing Notes |
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| JP 94017466 | B2 | 4 | C08G-063/00 | Based on patent JP 60026026 | |
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Abstract (Basic): JP 60026026 A

Prepn. has (1) a polyester with a main repeat unit of ethylene-terephthalate and having a limiting viscosity of 0.4 or more and a density of 1.38 or less is crystallised in a steam atmos., at a temp. lower than the solid phase polymerisation temp. of the polyester, and then (2) the resulting prepolymer is subjected to solid phase polymerisation in an inert gas atmos. or under reduced pressure at 180-240 deg. C.

USE/ADVANTAGE - Polyesters of high polymerisation degree with less acetaldehyde content may be obt'd., which are esp. suitable for materials of containers for foods, medicines and cosmetics.

In an example (1) prepn. of prepolymer by crystallisation has dimethyl terephthalate, ethylene-glycol and manganese acetate 4H₂O subjected to inter-esterification, and then germanium dioxide and phosphoric acid added before subjecting to melt-polycondensation to obtain polyethylene terephthalate pellets with an inherent viscosity of 0.52, acetaldehyde content of 120ppm, and density of 1.338. The obt'd. pellets then subjected to heat treatment at 160 deg. C in a steam atmos. for 10 mins., give a prepolymer having a density of 1.380, crystallisation degree of about 50%, and acetaldehyde content: 13.2ppm.

Solid phase polymerisation comprises drying these pellets for 4 hours with a hot and dry air at 160 deg. C, and then subjecting them to solid phase polymerisation at 210 deg. C, under a reduced pressure of 0.05 mmHg, for 16 hours. The obt'd. polymer has an inherent viscosity of 0.79 and an acetaldehyde content of 2.0ppm.

O/O

Derwent Class: A23; A92